

PRINTING MAC
readers may have n

slight change in the look of the pages of the Sydney Morning Herald during the last few days of the month. The columns are made up of a little black space on either side of the black type. The columns being slightly wider than used to be. This is owing to the type being no longer placed on a flat surface for the impression to be taken from it, but being packed round the face of a cylinder.

The Herald is now printed by one of Hoe's Six-Cylinder Rotary Printing Machines, and the possession of this machine will enable us to pace with the growing circulation of the journal as well as to delay going to press till the last moment when important news may be expected. As this is the first machine of the sort that has been imported into Australia, or, indeed, into the Southern Hemisphere, a few words descriptive of its construction

With the machines in ordinary use which are familiar to us, the motion of the type is made to travel and traverses forwards and backwards between the inkling rollers and the impression cylinders, as this requires that the direction of the move should be necessarily reversed, it follows that in checking the action as the type travels, there is a violent concussion each time, and a great waste of power. Strong springs are employed to break force of this jarring, but the strain on the machine from the perpetual banging is very great, and the danger of fracture which it can drive without danger some fracture.

It has, therefore, long been a desideratum to substitute a revolving motion for this forward and back

By setting the type on a cylinder, and coming in contact with the paper passed round the of the impression cylinders. There were fears that the type would be soiled by the ink, and the type was made to revolve first round such a cylinder and then round the impression cylinder. The ground the idea was condemned in some quarters without a trial. Mr. Applegarth, however, successfully disproved this objection in a machine he presented for the Times. But even he hesitated to place on the cylinder the impression of the printed matter that the weight of the type would cause to fall out as the wheel revolved. The difficulty was overcome by screwing up the type so tight, as to resist the influence of the force of gravitation, as well as of the centrifugal force. The machine was not encountered, and accordingly he made his invention

vertical. But as in feeding the sheets in, they of necessity enter the machine horizontally. It was necessary by means of tapes to twist each sheet so that its vertical direction would be applied to the type cylinder, and then to restore again to the horizontal position for it to be "off" and lie flat on the pile of finished papers. This was inconvenient, as occupying much room and time. The type, tapes, and the cylinder of the machine were a great step in advance, but established satisfactorily the possibility of printing with the placed in a curved form on the face of a cylinder.

Mr. Hoe, of New York, made the next improvement, by constructing a machine in which the horizontal type cylinder gave over the difficulty of keeping the types from falling out as revolved. This machine so exactly met the want

recalled that Mr. Rose handed him a bill with a \$5000 note from England and America in it. He said he expected to push his order in the market, that he would take an order without he had the cash. He was to advance before he began the machine. The month after, when it became necessary to get the parts of the *Hispania* to provide larger mechanical facilities for printing, the proprietors of the paper resorted on returning to America to visit his printing machines. The order, which had to wait his return, was not made until the summer of 1880, when he was at last shipped on board the *Alexander*, on a New York on 12th of August, 1880, arriving in Jackson on 21st December. After coming to rest on voyage, many parts of the machinery were

delay in putting them together. But in a few days the last piece was landed, the machine began to assume something like shape. Mr. G. B. Reichert, an intelligent craftsman from Mexico. The establishment is now in the hands of a man who has been in different parts of America, accompanied the command in the Alexander, in order to set it up and start it. And our acknowledgments are due to the men for the promptitude with which he set to work, and to the admiral, for his assistance in the matter. The task until it was accomplished. The whole was completed by the middle of January, and after a few days to admit of some alterations by the machine men, carpenters and gas-fitters, the machine set to work. The first issue was a very satisfactory, the regular issue of the *Herald* is printed from it on the morning of Thursday, the

The central piece of the mechanism is the type cylinder or segment of whose surface the type is placed, occupying about one-sixth of the circumference. Around this large cylinder are fixed equal distances, six small impression cylinders around which the blank sheets pass, and between these passages are presses against which the sheets are pressed as they revolve. To each impression cylinder there is of course a set of type cases laid, and from which are "fed" one by one to the machine, and also

delivery board. This last process is entirely controlled by the machine itself without the aid of any attention by means of a "dicer," which receives the shoe leys it dumps flat on the top of the board. As the leys pass over the rollers, they are cut by the rollers into cylinders, each of which prints a single line. The rollers are so arranged that a printed paper (on one side) is fed under the rollers, and a printed paper (on the other side) is fed over the rollers, thus printing every revolution of the central type cylinder. If this is an hour, to revolve 2500 times the course of an hour, or 411 times in the "course" of a minute, or many as 16,000 copies are struck off in one hour. This is the rate at which the machine can be run, and it can be made to reach 2000 copies an hour, actually. But in practice it is never desired to work a machine up to its maximum speed, except in cases of emergency. Moreover it is not a great deal of business in the men employed to run the machine, to make 16,000 copies of each type, to feed 16,000 copies of each type, to

machine per hour. It can be done, and often is by well-trained and competent hands; but as an accuracy in the feeding causes the sheet to be crumpled, and as the result, and requires it to be disentangled from the inking rollers, the machine is stopped, and the machine stopped, nothing is gained by driving rate beyond the uniform competency of all the feeders to pass the sheets with accuracy. In practice, therefore, the capacity of a machine is rated at 1,000 copies per hour, and can be obtained from it without in any way overloading it, or requiring from the attendants anything than good average skill in manipulation. The process of inking the types is the same in all the different types of machines, and is very simple as in the first of the illustrations. The work is somewhat in detail. But the fixing of the types on the cylinder is novel. On the segment of the cyl-

Which receives the turtle, are the four movable pieces of armor work, each the size of a page of the *Hsiao Shing*. These are called *tu*, and are made of iron. They are like the shell of turtle, though their shape would compound more accurately to that of an old tortoise curved along shield. They are all fitted with "column rings," and when the spaces between the rings are closed, the whole shield is held together and screwed together with powerful screws. As type is a piece of metal about an inch in length, it is obvious that when placed on their ends on a surface, their outward extremities would present a sharp edge, and the shield would be uneven, and would tend to open and become scattered. To compensate for this, the column rings are slightly wedge shaped, thicker above than below, and the column of type is uniformly compressed. When the shield is closed, the column rings

HERALD, have thus been filled with type, they began to roll on the cylinder, and tightly bolted down. As they can neither fall from the cylinder as it revolves, nor be thrown out by the impinging and screwing machine is 26000, Messrs. Wilkinson, Brothers the agents through which it was brought out.

John, Esq., to be district trustee for the district of West
and, in the room and stead of the said Peter Greve, Esq.

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